

Chapter 10 Review

Grade: 10th
Subject: Biology
Date: 2/18/13

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- 1 When two cells with n number of chromosomes fuse, what type of cell results?

$2n \rightarrow$ diploid

$1n \rightarrow$ haploid

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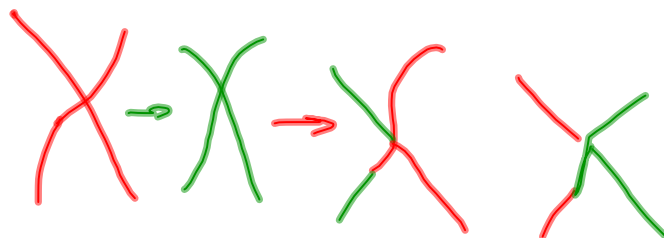
2 During which process are gametes formed?

meiosis

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3 What process results in an exchange of genes between homologous chromosomes?

crossing over



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4 How many chromosomes would a cell have during metaphase I if it has 12 chromosomes during interphase?

- A 6
- B 12
- C 24
- D 36

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5 What happens after metaphase II during meiosis?

- A they will experience replication
- B they will experience fertilization
- C their number per cell will be halved
- D they will divide into sister chromatids

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6 Which is not a characteristic of homologous chromosomes?

- A homologous chromosomes have the same length
- B homologous chromosomes have the same centromere position
- ☒ C Homologous chromosomes have the exact same type of allele at the same location
- D homologous chromosomes pair up during meiosis I

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7 If a black guinea pig (Bb) were crossed with a white guinea pig (bb) what would the resulting phenotypic ratio be?

- A 0:1 black to white
- B 1:0 black to white
- ☒ C 1:1 black to white
- D 3:1 black to white

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8 Polyploidy has been used in agriculture to increase the size of flowers.

True

False

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9 Crossing over and independent assortment produce genetic recombination.

True

False

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10 Which does not contribute to genetic variation?

- ☒ A chromosome number
- ☐ B crossing over
- ☐ C meiosis
- ☐ D random mating

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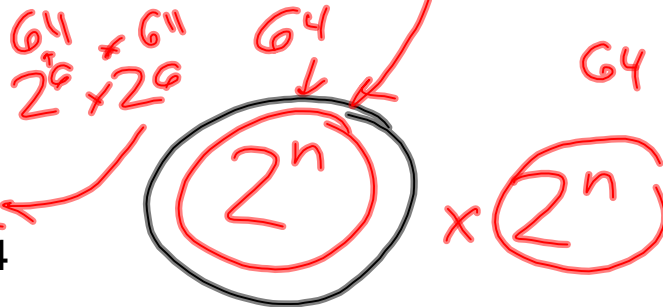
11 Which concept is considered an exception to Mendel's law of independent assortment?

- ☐ A crossing over
- ☒ B gene linkage
- ☐ C polyploidy
- ☐ D law of segregation

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12 A housefly, has six pairs of chromosomes. If two houseflies are crossed, how many possible types of fertilized eggs could result from the random lining up of the pairs?

- A 256
B 1024
C 4096
D 16,384



n = pairs of chromosomes

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13 For a housefly with six pairs of chromosomes, how many possible combinations of gametes can be produced by the random lining up of pairs in meiosis?

- A 32
B 48
C 64
D 120

2^n

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14 An organism that has the same two alleles for a trait is said to be homozygous

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15 An organism that has two different alleles for a trait is said to be heterozygous

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16 An organism's allele pairs is called its _____.

genotype

Aa
└─┘
allele pair

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17 The physical expression of an organism's alleles that code for a trait is the organism's _____.

phenotype

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18 The man considered to be the father of Genetics, who experimented with pea plants, is _____.

Gregor Mendel

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19 The process by which one haploid gamete combines with another haploid gamete is called _____.

fertilization

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20 The law of _____ states that two alleles for each trait separate during meiosis.

↑ segregation

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21 The occurrence of one or more extra sets of chromosomes in an organism is called _____.

polyploidy → $n \rightarrow$ haploid
 $2n \rightarrow$ diploid

$3n > =$ polyploidy

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22 The DNA on chromosomes are arranged in segments called genes that control the production of proteins.

1

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Know for the test:

★ Meiosis → steps of Meiosis I and Meiosis II

★ Punnett Squares

★ Polyploidy →

★ Review vocab

fertilized
 $2^n \times 2^n$
 oocyte

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